Grapevine Springs Restoration Project— Environmental Assessment DOI-BLM-NV-S030–2014–0023–EA

Prepared by
U.S. Department of the Interior
Bureau of Land Management
Las Vegas, , Nevada

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Chapter 1. Introduction

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1.1. Identifying Information:

1.1.1. Title, EA number, and type of project:

Grapevine Springs Restoration Project

DOI-BLM-NV-S030–2014–0023–EA

1.1.2. Location of Proposed Action:

Grapevine Springs are located North of Pahrump, approximately 4 miles northeast of the town of Johnnie off Hwy 160 in Nye County.

T17S, R53E, Section 21 SW

1.1.3. Name and Location of Preparing Office:

Southern Nevada District Office

Pahrump Field Office (PFO)

4701 N Torrey Pines Drive

Las Vegas, NV 89130

1.1.4. Identify the subject function code, lease, serial, or case file number:

N/A

1.1.5. Applicant Name:

Bureau of Land Management (BLM)

1.2. Purpose and Need for Action:

Purpose: The purpose of the proposed action is to comply with directives from the Bureau of Land Management (BLM) 1998 Las Vegas Resource Management Plan (RMP) by fencing and restoring a portion of Grapevine Springs to proper functioning condition in order to reduce threats to the BLM sensitive species utilizing the springs.

Need: Grapevine Springs is currently functioning at risk due to trampling and grazing causing disturbance to the springs. The Southeast Nevada Springsnail, a BLM sensitive species using the springs, are in need of protection and per BLM policy Manual 6840 Special Status Species Management and BLM Manual 1737 Riparian Area Management; this project proposes to provide that resource protection.

Decision to be made: The BLM will decide whether or not to approve fence installation at Grapevine Springs and, if so, decide between the various alternatives analyzed in this Environmental Assessment (EA).

1.3. Background:

The 37.68 acre Grapevine Springs property was acquired by the BLM in January 2012 though SNPLMA funding. The acquisition included 44.5 acre-feet annually of surface water rights. According to the Decision Record for the Southern Nevada Public Land Management Act (SNPLMA) Land Acquisition (N-85375) under EA DOI-BLM-NV-S030-2012-0005-EA,"Acquisition of the Grapevine Springs property and its associated water rights would present an opportunity for BLM to improve habitat conditions for the Southeast Nevada Springsnail. The Grapevine Springs property would be a valuable asset in continuing to help BLM meet management objectives for resource protection, provide a more manageable land ownership pattern, and enhance public uses and values." The EA also stated that "acquisition of Grapevine Springs and its associated water rights would present an opportunity for BLM to improve habitat conditions for the sensitive springsnail species and general wildlife in the area would also benefit from such an acquisition and that any future actions to protect the area (e.g. fencing) would be considered under a separate analysis."

The Johnnie Herd Management Area (HMA) has an estimated population of 114–150 wild horses and 200–298 wild burros. The BLM has determined the current Appropriate Management Level (AML) for this HMA is 54–108 burros and zero horses. Grapevine springs is one of 10 springs in the Spring Mountains known to provide habitat for the endemic Southeast Nevada Springsnail. This species has been petitioned to be federally listed and the USFWS has concluded that substantial information indicating that listing of the Southeast Nevada Springsnail may be warranted due to the "present or threatened destruction, modification, or curtailment of its habitat or range resulting from groundwater development, spring development, recreation, and grazing, and due to the inadequacy of existing regulatory mechanisms related to the permitting of groundwater rights and use (Docket No. FWS-R8-ES-2011-0001)." Existing native vegetation in the springs/pond area is heavily grazed and water quality is reduced by animal feces. Recent Proper Functioning Condition (PFC) monitoring has determined the spring is "functioning at risk" due to Wild Horse and Burro (WH&B) impacts. Under the direction of the BLM policy manuals 6840 Special Status Species Management and 1737 Riparian Area Management, as well as the BLM Wild Horses and Burros Handbook 4700, the BLM is attempting to restore the springs and associated riparian areas to PFC with fencing and reduce threats to this BLM sensitive species that are under the management control of the BLM.

1.4. Scoping, Public Involvement and Issues:

This EA has been scoped and reviewed internally by the BLM resource specialists to ensure that all natural, cultural and social resource issues and concerns are being identified and addressed appropriately. Their comments and evaluations are included in the affected environments section within this EA. External scoping was not conducted. Internal scoping included several meetings with management and resource specialists including wildlife, hydrology, and WH&B. Additional discussions were held with the restoration specialists. Several field visits were conducted, including a fall 2014 visit to assess restoration methods for the springs. Through Internal scoping, several potential issues were identified for the project including:

- wildlife,
- hydrology,
- migratory birds,
- threatened and endangered species,
- riparian, and
- wild horses and burros.

These meetings discussed the need for the project to work for the protection of BLM sensitive species as well as maintaining water access for wild horse and burros that are known to concentrate in the area. The completed EA and decision documents will be posted to the NEPA Register website for public viewing. The public will have the opportunity for a 30–day public appeal period.

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Chapter 2. Proposed Action and Alternatives

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This section of the EA describes the proposed action and alternatives. Four (4) alternatives are being considered:

1. Alternative A (Proposed Action): The fence would enclose approximately the first 800 feet (ft.) of Grapevine Spring from the adit/gate to the two-track road crossing the spring, and also include breaching the lower artificial pond to reconnect the spring flow with main spring channel;

2. Alternative B: The fence would enclose approximately the first 800 ft. of Grapevine Spring from the adit/gate to the two-track road crossing the spring (same as the fencing in Alternative A, but no breaching of the pond would occur);

3. Alternative C: The fence would enclose approximately the first 400 feet of the Grapevine Spring from the adit/gated spring head and run to the west of the spring head; and

4. Alternative D (No Action Alternative): There would be no action taken; no fence would be built.

2.1. Description of the Proposed Action:

The proposed action (Alternative A) is to fence approximately the first 800 ft. of Grapevine Spring from the adit/gate to the two-track road that crosses the spring. In addition, the lower artificial pond would be breached in a small section at the west end to reconnect the spring flow with the main spring channel by way of a culvert under the main access road (See Map 2.1 Alternative A). The proposed action would install up to 800 feet of fencing on either side of the Grapevine Springs springbrook that will enclose between 4,000 and 16,000 square feet (0.09 — 0.37 acres), depending on topography and existing riparian vegetation. The fence may be installed in two stages. If so, the first 600 feet will be installed early 2015 and if no significant adverse impacts are detected within the first year, additional 200 feet of the springbrook would be fenced, totalling at maximum of 800 feet of enclosed springbrook. The proposed fence is a three rail pipe jack steel fence with concreted posts, at height of a minimum of 4 feet. Two inch diameter rails are located at roughly 18”, 34”, and 48”. The entire fence would be welded so that future damage and maintenance would be reduced. Finger gates would be installed in the corner of the fence to allow for one way escape from inside, in case any large animals end up entering and getting trapped inside fence. Fencing would be placed approximately 4-6 feet from spring, depending on existing constraints, and no disturbance would occur to the actual spring from fence installation. The fence would be painted a neutral color to conform to the BLM Visual Resources Management (VRM) guidelines.

The enclosure at the main spring would allow vegetation to regain a foothold at the site and consequently would provide an opportunity for the springs as well as the springsnail populations to recover. An increase in vegetation cover in the area would help to stabilize the soil and decrease erosion. The surface flow would be able to create a more stable flow pattern that would allow the surface water to return to its natural state. Water quality would also be expected to improve. A stable system would increase biodiversity in the spring which would benefit most flora and fauna, including endemic springsnails. In addition, the lower artificial pond would be breached in a small section to reconnect the spring flow with the main spring channel by way of a culvert under the road. No additional fencing is proposed on the restored/reconnected spring.

Fence installation will require 2–5 people and 1-2 pickup trucks, plus one trailer to carry materials. The trucks will only be driven and parked on established roads. Fence installation would require people to work on site for no more than two weeks. Breaching the small section of the pond and installing a culvert under the road would require a maintenance crew of 2 people and one backhoe/bobcat which would be brought in on a truck and trailer and driven/parked on established roads. The breach work would be completed within one day.

Interpretive signs will be installed for the public explaining why the spring is being fenced and desired outcomes of the restoration project. This would help educate the public on the purpose of the fencing and potentially reduce the chance of vandalism at this site. Water testing of the spring and ponds has been conducted as well as motion sensor cameras installed to monitor springs.

The project also proposes to cut and plant willow stakes along the main spring to head start the riparian vegetation and additional native rocks may be placed in the spring to enhance habitat for the springsnails. Since the property is newly acquired under federal ownership, there is existing defunct piping around the springs that is proposed to be removed from the site prior to fence installation. Minimal disturbance will occur for installation of the fencing and all existing native vegetation will remain to greatest extent possible. Any cactus/yucca within the path of fence placement would be avoided or would be salvaged and replanted after fence installation. Hand removal of any non-native/invasive vegetation in the fenced areas/breach area will occur in coordination with the BLM weeds specialists and removed off site and disposed of in accordance to the BLM weed management plan and BMPs. All BMP's for reducing weed introduction/spread would be implemented.

All wildlife and WH&B in the area would not be harassed or harmed and BMP's for desert tortoise and springsnails would be followed. All avoidance, minimization, and/or mitigation measures identified in the EA will be strictly followed by staff implimenting the proposed project.

A USGS continuous streamgage to quantify streamflow from Grapevine Springs has been collecting baseline data since September 2013. Water sources that would remain open and available to WH&B at the project site include at a minimum the lower portion of Grapevine springs west of 2 track road, upper pond and spring heads, and newly created spring channel below the lower pond. Additional available water in Grapevine Springs will remain open to WH&B use as well as the nearby intermittent Kwitchip and Diebert Springs, and multiple springs located on US Forest Service lands in the Spring Mountains.

Additional maintenance of the project may be needed for fence repairs, vegetation or culvert maintenance, or other needs to be determined by specialist. Although not anticipated, if the fence is not meeting needs of the restoration of the springs or the safety of the human environment, the fence would be removed utilizing the BLM BMPs for removal and reclamation.

Project Design Features:

Design features are those specific means, measures or practices that are components of the proposed action and alternatives that would reduce or eliminate adverse effects to resources. Standard operating procedures, stipulations, and best management practices are usually considered design features. The following list contains stipulations and minimization measures that will be incorporated as project design features and will be implemented prior to, during, and post construction to avoid or reduce the potential impacts to resources as a result of the project.

The Proposed Action will:

1. Comply with all applicable local, state, and federal air, water, hazardous substance, solid waste, or other environmental laws and regulations. (Air, Water, HAZMAT management)

2. Employee best management practices for excessive fugitive dust during project activity. (Air resource management)

3. Comply with fire restrictions current at time of project implementation. (Fire management)

4. Comply with standard weed mitigation procedures and BMP's. (Invasive Species/Noxious Weeds management)

5. Comply with the Endangered Species Act and section 7 Consultation for this project is covered under the Programmatic Biological Opinion (84320-2010-F-0365) contingent on compliance with the attached terms and conditions. (Threatened & Endangered Species management)

6. A speed limit of 25 miles per hour shall be required for all vehicles travelling on the existing access roads. (Air, Wildlife resources management)

7. Minimize physical disturbance to the waterway, banks, and surrounding vegetation. Use only existing travel routes and travel through open upland areas whenever possible. (Vegetation, Wildlife Resources management)

8. Should a desert tortoise enter the area of activity, all activity shall cease until such time as the animal has left the area of its own accord. (Threatened & Endangered Species management)

9. Workers will be instructed to check underneath all vehicles before moving them as tortoises often take cover underneath parked vehicles. (Threatened & Endangered Species management)

10. Provide education and guidance to those on-site about springsnails to minimize any adverse impacts from work activities. Any need to enter the stream should be cleared of springsnails in the immediate area prior to entering the spring. (Special Status Species management)

11. If sedimentation is expected from work in and near stream, sediment, runoff, and erosion control measures should be installed before starting work (e.g., temporary silt fences immediately below work area). These should be cleared of any rocks and/or vegetation that may contain springsnails. (Special Status Species, Riparian resources management)

12. The proponent will be required to adhere to the following mitigation measures to protect migratory birds:

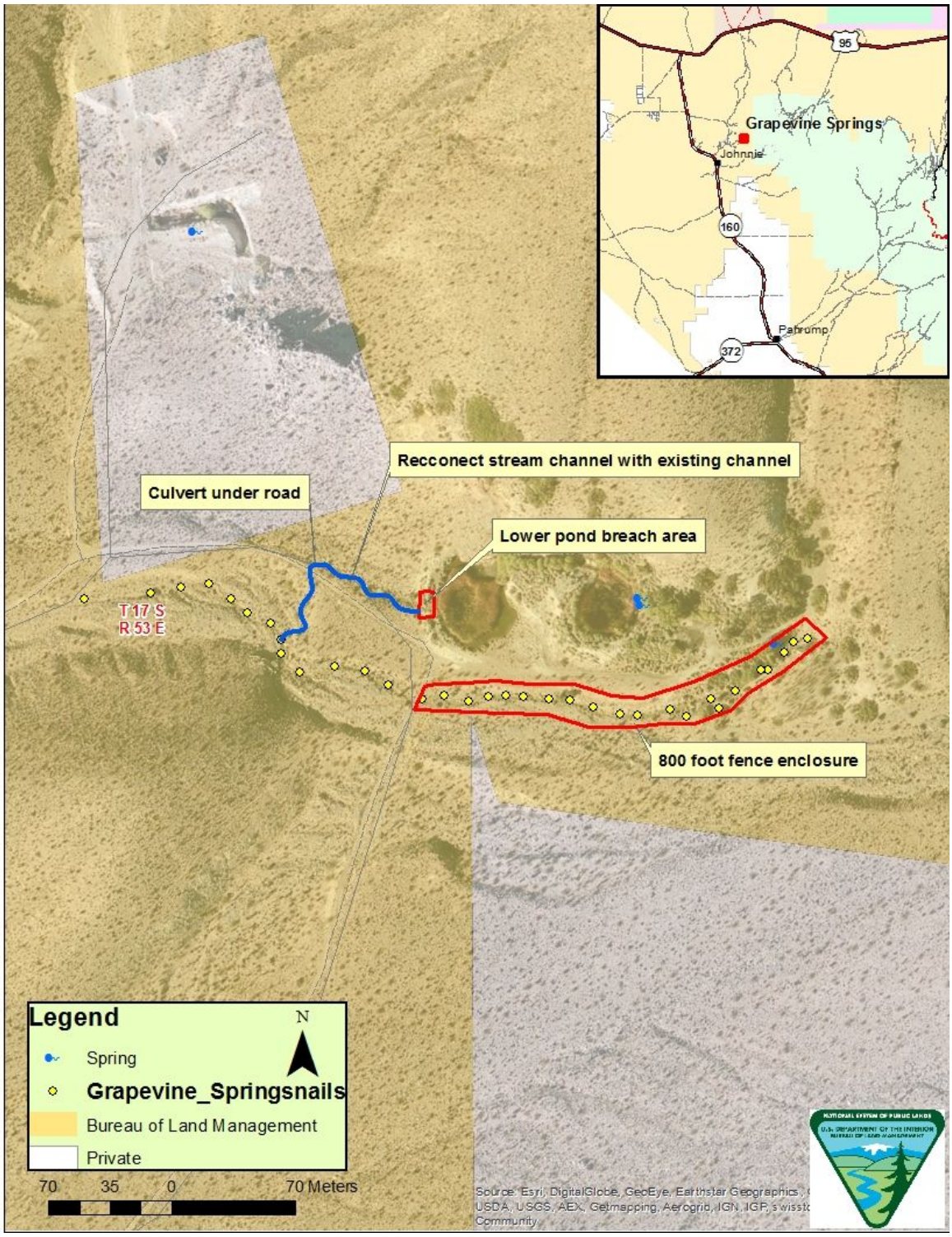
    1) To prevent undue harm, habitat-altering projects or portions of projects should be scheduled outside of the bird breeding season. In upland desert habitats and ephemeral washes containing upland species, the season generally occurs between February 15th and August 31st.

    2) If a project that may alter any breeding habitat has to occur during the breeding season, then a qualified biologist must survey the area for nests prior to commencement of construction activities. This shall include burrowing and ground nesting species in addition

to those nesting in vegetation. If any active nests (containing eggs or young) are found, an appropriately-sized buffer area must be avoided until the young birds fledge.

13. Cactus and yucca may be present within the project impact area. Only minimal surface disturbance will occur and vehicle access is limited to existing roads. To the extent practical, cacti and yucca within the project area should be avoided by this action. If unable to be avoided, cactus and yucca should be salvaged and replanted after fence installation as stated in project description. (Woodland/Forestry management).

14. All individuals will not harass (feed, pet, chase, etc.) wild horses or burros if encountered on or near the roads or project areas. If they do see any wild horses or burros, they should keep a safe distance, they are wild animals and can be unpredictable, especially during foaling and breeding season. (Wild Horses & Burros management)



Map 2.1. Alternative A (Proposed Action) Fence approximately the first 800 ft of Grapevine Spring from adit/gate to 2 track road. The lower artificial pond would be breached to reconnect the spring flow with main spring channel by way of culvert under road.

Monitoring:

Once the project is completed, monitoring of the site will continue with:

1. Springsnail surveys conducted twice a year;

2. Wildlife and WH&B springs/pond usage will be monitored by cameras to see how the area is being used as a watering source;

3. Water flow data from USGS steam gauge will be collected several times per year;

4. Water quality testing will occur to verify improvement in water quality; and

5. Proper Functioning Condition (PFC) assessment on the spring will be performed once the spring has had time to recover.

Grapevine Springs is currently Functioning at Risk, which is defined as riparian-wetland areas that are in functional condition but an existing soil, water, or vegetation attribute makes them susceptible to degradation. The goal of the monitoring would be to achieve PFC, which is defined by "adequate vegetation, landform, or large woody debris is present to dissipate stream energy associated with high waterflows, thereby reducing erosion and improving water quality; filter sediment, capture bedload, and aid floodplain development; improve flood-water retention and ground-water recharge; develop root masses that stabilize streambanks against cutting action; develop diverse ponding and channel characteristics to provide the habitat and the water depth, duration, and temperature necessary for fish production, waterfowl breeding, and other uses; and support greater biodiversity."

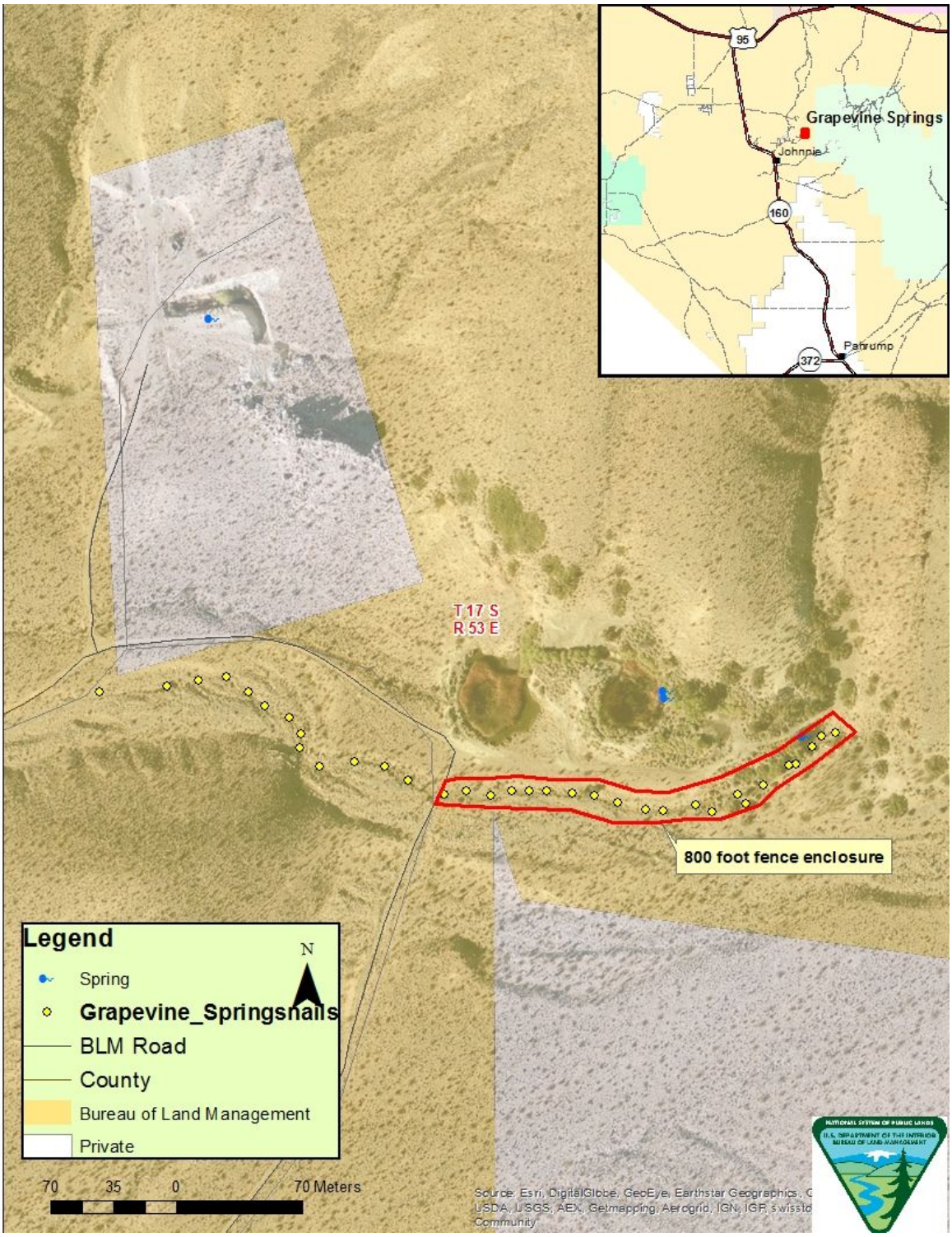
2.2. Description of Alternatives Analyzed in Detail:

The following section provides descriptions of the three additional alternatives proposed for this action.

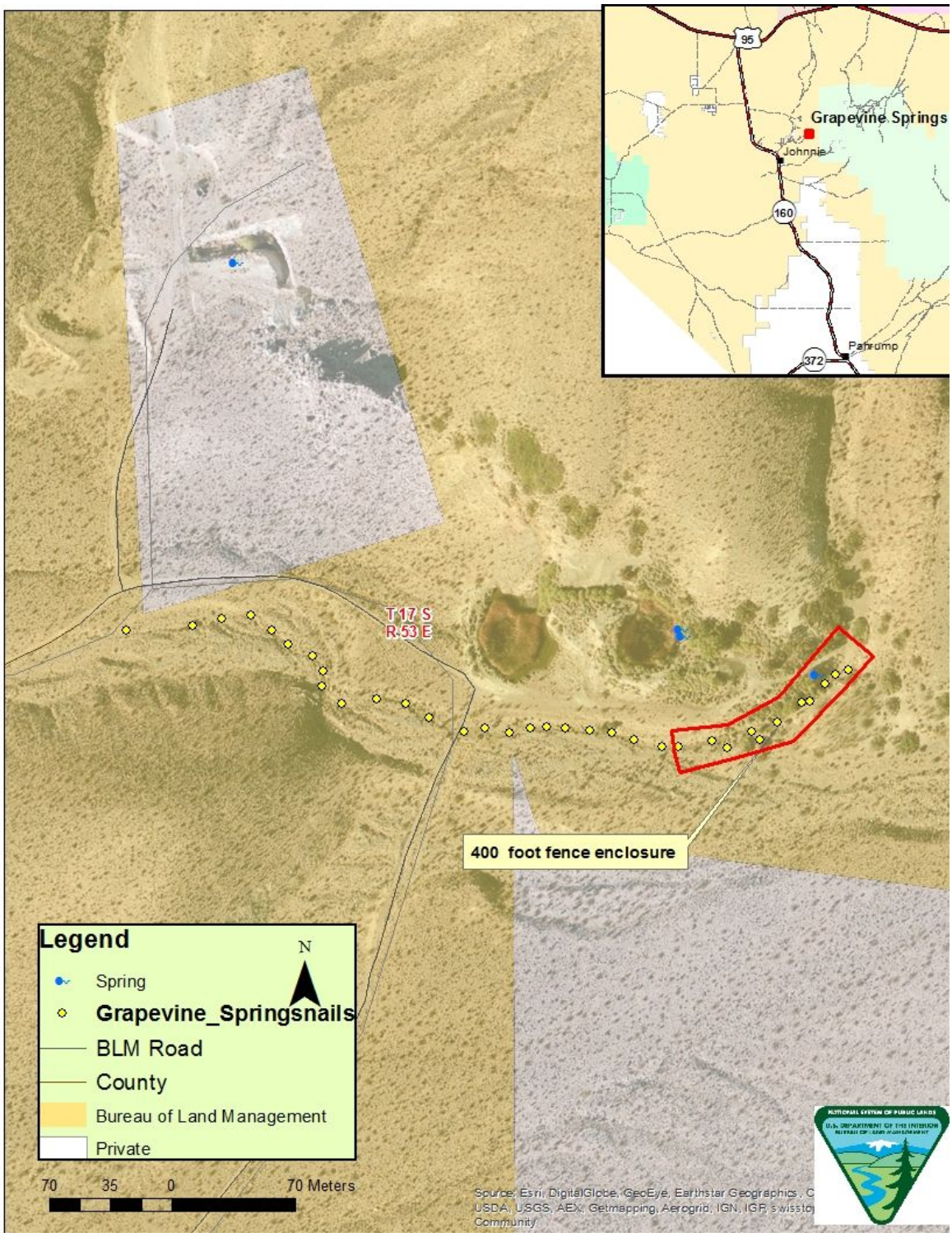
Alternative B: Fence approximately the first 800 ft. of Grapevine Spring from the adit/gate to the 2 track road that crosses the spring (See Map 2.2 Alternative B). The fence installation, design features, and monitoring would be identical to that described in Alternative A (Proposed Action). Alternative B, however, would not breach the pond.

Alternative C: Fence approximately the first 400 ft. of the Grapevine Spring starting from the adit/gated spring head to the west (See Map 2.3 Alternative C). Fence installation procedures, design features, and monitoring would be identical to that described in Alternative A (Proposed Action). Alternative C, however, would have the fence end approximately 400 feet west of the adit.

Alternative D: No fence would be installed and no alterations to the lower pond would be conducted.



Map 2.2. Alternative B: Fence approximately the first 800 ft. of Grapevine Spring from the adit/gate to the 2 track road that crosses the spring.



Map 2.3. Alternative C: Fence approximately the first 400 ft. of the Grapevine Spring starting from the adit/gated spring head to the west.

2.3. Alternatives Considered but not Analyzed in Detail:

Resource specialists looked for other possible alternatives and discussed piping water from the spring to a nearby trough outside the proposed exclosure to make water available for WH&B. It was removed from further analysis because of the following reasons:

- All the fencing alternatives will ensure that water is available outside of the exclosure for WH&B.
- The WH&B in this portion of the Johnnie HMA are habituated to drinking from the natural flow of the spring and the adjacent ponds.

2.4. Conformance:

The proposed action is in conformance with the following laws, regulations, policies, land use plans, program guidance, and local permitting requirements:

- National Environmental Policy Act (NEPA) of 1969, as amended (Public Law 91-190, 42 United States Code [USC] 4321 et seq.)
- BLM NEPA Handbook (H-1790-1) (BLM 2008)
- Federal Land Policy Management Act (FLPMA), as amended
- The Wild and Free-Roaming Horses and Burros Act of 1971
- The Endangered Species Act of 1973 (ESA; 7 U.S.C. § 136, 16 U.S.C. § 1531 et seq.)
- Las Vegas Resource Management Plan (October, 1998)
- BLM Policy Manual 6840 Special Status Species Management
- BLM Policy Manual 1737 Riparian Area Management
- BLM Wild Horses and Burros Handbook H-4700–1

A list of management objectives and directions from the Las Vegas RMP and Wild Horses and Burros Handbook are listed in Appendix B at the end of this EA.

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Chapter 3. Affected Environment:

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The table below (Table 1) summarizes the environmental attributes that have been reviewed, whether they may be affected by the proposed action, and the rationale for that determination. Elements that are not present or are present but would not be affected will not be discussed further in this EA. If resources that are present and may be affected by the proposed action would be analyzed further in the Affected Environment and Environmental Consequences section of this EA.

Table 1. Affected Resources Table

Resource or Resource Use	Not Present	Present but Not Affected	Present / May be Affected	Rationale
Air Resources		X		Employee best management practices for excessive fugitive dust during project activity would be conducted during the construction of the Proposed Action and thus air resources would not be affected to a degree that detailed analysis would be required.
Areas of Critical Environmental Concern (ACEC)	X			The proposed project area is not within an Area of Critical Environmental Concern (ACEC). However, this area is proposed as an 87 acre ACEC in Alternatives 2-4 of the Resource Management Plan Revision. An area of critical environmental concern (ACEC) is defined in the Federal Land Policy and Management Act (Public Law 94-579, Section 103(a)) as an area within the public lands where special management attention is required to protect and prevent irreparable damage to important historic, cultural, or scenic values; fish and wildlife resources or other natural systems or processes; or to protect life and safety from natural hazards. BLM prepared regulations for implementing the ACEC provisions of FLPMA. These regulations are found at 43 CFR 1610.7-2(b). Relevant and Important values identified for this ACEC is the Southeast Nevada Springsnail and potential impacts to this species will be discussed in the BLM sensitive species section.
BLM Natural Areas	X			Resource not present.
Cultural Resources		X		Per the 2014 BLM Nevada Protocol Agreement with State Historic Preservation Office the project is in a previously disturbed area and will not have any effect to a historic property; no issues.
Greenhouse Gas Emissions		X		Currently there are no emission limits for suspected Greenhouse Gas (GHG) emissions, and no technically defensible methodology for predicting potential climate changes from GHG emissions. However, there are, and would continue to be, several efforts to address GHG emissions from federal activities, including BLM authorized uses.
Environmental Justice	X			It is unlikely that any minority or low-income communities are present in project area.

Farmlands (Prime or Unique)	X			There are no prime or unique farmland designations in the District.
Fish and Wildlife Excluding Federally Listed Species			X	Potential for impacts. Carried forward for analysis.
Floodplains	X			There are no FEMA designated floodplains present in the project area.
Fuels/Fire Management		X		Compliance with fire restrictions current at time of project implementation would mitigate any risks introduced by the proposed actions. Specific, noncompliant activities may be waived on a case by case basis by a line officer after review and approval by the Fire Management Officer.
Geology / Mineral Resources/Energy Production	X			No issues. There is no record of mining activity
Hydrologic Conditions			X	Potential for impacts. Carried forward for analysis.
Invasive Species/Noxious Weeds		X		Because all project actions must conform to applicable BMP's and standard BLM weed stipulation and minimal surface disturbance in this project poses no serious threats to spread of Invasive Species / Noxious Weeds, detailed analysis is not needed.
Lands/Access		X		The subject restoration project is proposed in an area known as the Grapevine Springs property, which was purchased and acquired pursuant to the SNPLMA by the USA/BLM on 2/8/2013. The Solicitor provided BLM title clearance on 9/25/2013. BLM purchased this property to acquire environmentally sensitive land and interest in land (surface water rights) to provide habitat for threatened and/or endangered species, several BLM sensitive species (spring snail), migratory birds, and other wildlife including wild horses and burros. Acquisition would also provide resource protection, provide a more manageable land ownership pattern, and enhance public uses and values. Any actions to occur on the acquired land should not negatively impact the purpose of the acquisition.
Livestock Grazing	X			The proposed action area is not located in any authorized grazing allotments.
Migratory Birds			X	Potential for impacts. Carried forward for analysis.
Native American Religious Concerns		X		Based on previous consultations/coordination for spring sites in the Pahrump area, no Native American religious concerns have been identified, and no further analysis is needed.
Paleontology		X		No fossil bearing strata will be disturbed or this project; no issues.

Rangeland Health Standards		X		Rangeland Health Standards are comprised of four fundamental values and includes: watersheds, ecological processes, water quality, and habitats (as listed in Title 43 CFR § 4180.1). Any potential impacts to Rangeland Health Standards would be the same as the potential impacts to the four values (watersheds, ecological processes, water quality, and habitats) which are analyzed within the resource sections of vegetation, hydrology, wildlife and federally listed species sections. No further analysis needed here as these resource analyses are adequate for Rangeland Health Standards.
Recreation		X		The area is typically used for equestrian trail riding, hunting, wildlife viewing, photography, rock collecting, hiking and exploring. Casual and permitted recreation use on roads and trails may be temporarily displaced but not affected to a degree that detailed analysis is required.
Socio-Economics		X		While the proposed project of enhancing the environmental ecosystem could be a social benefit, it would not be to a degree that detailed analysis is required.
Soils			X	Potential for impacts. Carried forward for analysis.
Threatened, Endangered or Candidate Plant Species	X			Based on known locations and habitat requirements, Threatened, Endangered or Candidate plant species are not present.
Threatened, Endangered or Candidate Animal Species			X	Potential for impacts. Carried forward for analysis.
Wastes (hazardous or solid)	X			Not present.
Water Resources/Quality (drinking/surface/ground)			X	Potential for impacts. Carried forward for analysis.
Wetlands/Riparian Zones			X	Potential for impacts. Carried forward for analysis.
Wild and Scenic Rivers	X			Resource not present.
Woodland / Forestry		X		Cactus and yucca are considered government property and are regulated under the Nevada BLM forestry program. As the proposed project will have only minimal new disturbance, no impacts to cactus, yucca or other forestry products are expected.
Wilderness/WSA	X			Resources not present.
Vegetation Excluding Federally Listed Species		X		BLM sensitive plant species, *Penstemon fruiticiformis ssp. amargosae* (Death Valley beardtongue), has been noted within 200' of Grapevine Spring. If Death Valley beardtongue is present, due to the small amount of disturbance, potential impacts to the species would be minimal. Installation of the fence will benefit the species and its habitat by allowing the native vegetation to regrow in an area that is currently heavily grazed and denuded of vegetation.

Visual Resources		X		The project site is in a remote draw where it is unlikely to be seen by anyone other than those specifically going to the spring. It is not visible from surrounding lands or any public or private road or structure. The project is within VRM Class III and the area has been altered by the creation of large retention ponds filled with alien vegetation, iron bars over the cave source of one of the water springs, a USGS gaging station, a jeep road up to and into the stream flow, large transmission towers on the approach road, etc. The pipe fence would have a negative effect on the scenery but it is not expected to be visible by users of the surrounding public and private lands unless viewers are at the spring itself. It should be painted with the colors from the BLM VRM color chart that match the surrounding terrain. The breaching of the ponds would have a temporary effect on the scene but the return of natural water flow would be a long term benefit to the visual resource.
Wild Horses and Burros			X	Potential for impacts. Carried forward for analysis.
Lands with Wilderness Characteristics	X			There are no lands managed for wilderness characteristics.

3.1. Fish and Wildlife (Excluding US Fish & Wildlife Service Designated Species)

In addition to Fish and Wildlife, this section includes description of Migratory Birds.

The proposed project area supports and is adjacent to lands that support wildlife characteristic of the Mojave Desert. Biological diversity varies according to topography, plant community, and proximity to water, soil type, and season. For a comprehensive discussion of potential wildlife species that may be present, refer to the most recent Resource Management Plan for the BLM Southern Nevada District.

3.1.1. BLM Sensitive Wildlife Species

BLM sensitive species are species that require special management consideration to avoid potential future listing under ESA and that have been identified in accordance with procedures set forth in BLM Manual 6840 – Special Status Species. A complete list of BLM sensitive species within the area can be found in the Resource Management Plan. Many of these species as well as other wildlife species of concern are also discussed in the Nevada State Wildlife Action Plan (NDOW 2012) and the Clark County Multiple Species Habitat Conservation Plan. Sensitive bird species are also provided protection by the Migratory Bird Treaty Act and thus are discussed in the Migratory Bird Section. The following sensitive species could potentially be impacted by the proposed action:

Bats

There are 20 BLM sensitive bat species that are known to occur within the general area. Day roosts include caves, trees, mines, buildings, and bridges. Little population information is known for most bat species within the area, therefore; most trends are unknown with the exception of six species (cave myotis, Townsend's big-eared bat, western pipistrelle, fringed myotis, long-eared myotis, and long-legged myotis) that are experiencing downward trends. In general, the long-term persistence of North American bat species is threatened by the loss of clean, open water; modification or destruction of roosting and foraging habitat; and, for hibernating species, disturbance or destruction of hibernacula. Chemicals in the environment that affect bats or their prey are also threats. There is potential for the adit at Grapevine Springs to support bat roosting habitat for bats and bats have been observed at this location. In addition, the artificial ponds in the project area also supply a water source and foraging area for these species.

Desert bighorn sheep

Bighorn sheep habitat preference includes open, usually treeless vegetation types with plant communities containing grasses, sedges, and forbs for foraging, typically in close proximity to steep, rocky terrain for predator escape where they exhibit remarkable agility. Moisture is primarily derived through their diet of a variety of desert plants, however, surface waters are a vital component of their survival and important to population health. Desert bighorns have a lengthy lambing season that can begin in December and end in June. There is NDOW identified potential habitat for bighorn sheep within the project area where the proposed action would occur. If bighorn were to use this area, they likely would use the spring/ponds for a drinking source but are not known to congregate at springs.

Springsnails

Grapevine Springs supports the Southeast Nevada springsnail (Pyrgulopsis turbatrix), a BLM sensitive species. Springsnails are a diverse group of very small freshwater gastropods that are found in the outflow of springs. Due to the isolation of most springs, there has been a large amount of speciation in the group. Therefore, many of the species are endemic to a single or couple of springs within the planning area. This spring is one of 10 springs in the Spring Mountains known to provide habitat for this endemic Springsnail. This species has been petitioned to be federally listed and the USFWS has concluded that substantial information indicating that listing of the species may be warranted due to existing threats, including grazing (Docket No. FWS-R8-ES-2011-0001). This species has been documented within the entire footprint of alternative A and beyond, as well as in the flowing spring portions between the ponds (Sada, 2011). Field observations in 2010 indicated that springsnails were most abundant in larger, flowing habitats. They were scarce in shallow habitats without flowing water, and they did not occupy ponds. Their abundance and distribution were probably greater at Grapevine Springs before impoundments were constructed. Their abundance is also reduced by non-native ungulate trampling and grazing.

Migratory Birds

The Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703 *et. seq*.) protects migratory birds and their nests. A list of MBTA protected birds are found in 50 C.F.R. 10.13. The list of birds protected under this regulation is extensive and the project site has potential to support many of these species, including BLM sensitive species, and their nests. Typically, the breeding season is when these species are most sensitive to disturbance, which generally occurs from February 15th

through August 31st. Since the project is located at a water source, a variety of riparian birds may use the project area for foraging and nesting. The following BLM sensitive bird species could potentially be impacted by the proposed action:

Western burrowing owl

The Western burrowing owl is a diurnal bird of prey specialized for shrub-steppe habitats. Burrowing owl habitat in the Mojave Desert typically consists of open, dry, treeless areas on the desert floor. Burrowing owls most frequently use mammal burrows created by other animals such as ground squirrels (*Spermophilus* spp.), coyotes (*Canis latrans*), or desert tortoises (*Gopherus agassizii*). The burrows are used for nesting, roosting, cover, and caching prey. In recent decades, the range and species count have been declining primarily due to agricultural, industrial, and urban development that reduce burrow availability.

3.2. Hydrologic Conditions (section includes Wetlands/Riparian Zones)

A riparian-wetland area is considered to be in proper functioning condition when adequate vegetation, landform, or large woody debris is present to:

- dissipate stream energy associated with high waterflow, thereby reducing erosion and improving water quality;
- filter sediment, capture bedload, and aid floodplain development;
- improve flood-water retention and ground-water recharge;
- develop root masses that stabilize streambanks against cutting action;
- develop diverse ponding and channel characteristics *to provide* the habitat and the water depth, duration, and temperature necessary for fish production, waterfowl breeding, and other uses;
- support greater biodiversity.

The components of this definition are in order relative to how processes work on the ground.

Hydrologic characteristics of lentic areas are periodically inundated or have soils saturated to the surface at some time during the growing season. Areas with evident characteristics of wetland hydrology are those where the presence of water has an overriding influence on characteristics of vegetation and soils due to anaerobic and reducing conditions, respectively. Such characteristics are usually present in areas that are inundated or saturated to the surface for sufficient duration to develop hydric soils and support vegetation typically adapted for life in periodically anaerobic soil conditions. Water quality and riparian systems are intricately related and, as stated above, water quality is a function of the health of the riparian system.

3.3. Migratory Birds

Described in Section 3.1 Fish and Wildlife (Excluding US Fish & Wildlife Service Designated Species).

3.4. Soils

The soils surrounding Grapevine spring fall into Hydrologic Soil Group D, which is classified as Shallow Gravely Sandy Loam. The parent material is residuum weathered from volcanic rocks. The Zibate-Rock outcrop complex has a slope ranging from 15 to 50 percent where the spring emerges. The soils in which the majority of the riparian area and stream channel is located also fall into Hydrologic Soil Group D, which is classified as extremely gravely fine sandy loam. The parent material is alluvium derived from mixed rock sources. The Longjim-Puron-Niavi association has a slope of about 10 percent. Soils beyond the rock outcrops and related associations generally are moderately deep (greater than 60 inches); are moderately to very alkaline (typical pH values range between 7.5 to 9.5); and typically have moderate to moderately rapid permeability.

3.5. Threatened, Endangered, Proposed or Candidate Wildlife Species and Critical Habitat

Threatened and endangered species are placed on a federal list by the U. S. Fish and Wildlife Service (USFWS) and receive protection under the Endangered Species Act of 1973, as amended. The only federally protected species known to occur in the vicinity of the project area is the threatened Mojave desert tortoise (*Gopherus agassizii*). The proposed project is not within desert tortoise critical habitat or critical habitat for any other federally listed species.

The Mojave desert tortoise occurs primarily on flats and bajadas with soils ranging from sand to sandy-gravel. They are also found on rocky terrain and slopes. Tortoises occur in saltbush scrub, creosote scrub, and blackbrush scrub habitat types. Within these vegetation types, desert tortoises can potentially survive and reproduce provided their basic habitat requirements are met. These requirements include a sufficient amount and quality of forage species; shelter sites for protection from predators and environmental extremes; suitable substrates for burrowing, nesting, and overwintering; various plants for shelter; and adequate area for movement, dispersal, and gene flow. Historical survey data indicate that the area surrounding the project site is low density tortoise habitat. There is no current tortoise survey data for this immediate project area however, the area surrounding the springs is suitable habitat.

3.6. Water Resources/Quality

Ambient water quality of Grapevine Springs is largely a function of the mineralogical composition of geologic formation through which the groundwater flows. The springs lie along a linear trend of springs that occur along the geologic contact between alluvium and quartzite. The linear occurrence of these springs suggests that they are fault controlled by the range front fault along the base of the Spring Mountains. The limestone block below Grapevine Springs and the limestone block its to northwest also fall along this fault's trend. These springs are isolated from all other aquatic and riparian systems in the region. After water emerges, it flows for a short distance before percolating into alluvium and drying. This isolation characterizes all springs in the Spring Mountains. There are no known records of its historical (natural) condition, discharge, or the number of springs at the site. Current and perceived historic conditions are described separately below because of the extent that these springs have been altered.

Water discharged at Grapevine springs is characterized by moderate total dissolved solids concentrations, moderately alkaline pH and variable concentrations of inorganic constituents, such as calcium, magnesium, bicarbonate, sulfate, silica, sodium, chloride and potassium. Concentrations of nitrate and e-coli bacteria can be attributed to animal wastes (mostly from wild horses and burros observed in the area). Of the three surface water areas the lower pond had about 8 times the concentrations of e-coli bacteria than the other upper pond and the spring fed stream (measured 3 feet below the adit). Excessive rates of sediment transport and deposition can occur during storm water run-off events, especially where riparian vegetation has been heavily grazed by wild horses and burros and other wildlife.

Discharge between the ponds during the winter and early spring averages approximately 6.2 gallons per minute. During the summer when evaporation and transpiration were at their maxia, discharge between the ponds drops to about 0.9 gallons per minute. The main plant growing in the upper pond is cattail (*Typha* sp.), which grows mostly around the perimeter leaving at least half of the surface as open water. Cattails have been shown to increase water loss by evapotranspiration over a range of 1.75 to 2.5 times the loss of just evaporation (Ramey 2004). The ponds were constructed with earth moving equipment using the local native coarse-grain alluvial fan material. Over the years, organic matter has fallen to the bottom to create a less permeable layer, but there is little doubt that water infiltrates through pond bottoms. Using the unaccounted loss rate of 4.3 gallons per minute estimated at the upper pond, a rate of loss per square foot of pond area was determined to account for transpiration and infiltration. The rate of loss of 0.0735 feet per day per foot of surface area was determined by calculating the need loss rate to remove 4.28 gallons per minute from the area of the upper pond. This rate was also applied to the area of the lower pond to arrive at an estimate for infiltration and transpiration over the total ponded surface. The combined infiltration and transpiration for the upper and lower ponds are 4.28 and 6.87 gallons per minute respectively.

Total estimated discharge from Grapevine Springs of 29 gpm was calculated over one year, by: 1—using discharge measurements from the adit spring (measured by USGS), 2—calculating evaporation from seep areas and ponds, and 3—estimating pond transpiration and infiltration.

3.7. Wetlands/Riparian Zones

Described in Section 3.2 Hydrologic Conditions.

3.8. Wild Horses and Burros

Grapevines Springs is one of the perennial water sources available to the wild horses and burros in the Johnnie HMA. The Johnnie HMA has an estimated population of 114–150 wild horses and 200–298 wild burros. Grapevine Springs is located in the northeast portion of the HMA and is one of the few perennial spring sources in that area for the majority of the wild horses and burros in that specific portion of the HMA. Wild horses and burros are to be managed in balance with the other uses and the productive capacity of their habitat (i.e., maintain a thriving, natural ecological balance on the public land). Maintaining and improving water sources helps maintain that balance and sustain healthy rangelands and maintain wild horse and burro herd health. There are other springs in the general area, directly north are Kwichup and Diebert Springs, these springs have intermittent flow and are usually dry in the hot summer months, to the southeast lies Horseshutem on the Forest Service land, Horseshutem Spring is a perennial water source.

Initial water quality testing on the ponds and riparian area associated with Grapevine Springs shows a very low level of nitrates and iron. These levels should not be an issue for the wild horses and burros.

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Chapter 4. Environmental Effects:

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4.1. Fish and Wildlife Excluding USFWS Designated Species *(Section includes Migratory Birds)*

Common to Alternatives A, B and C:

Wildlife species would be displaced as approximately 0.2 acres of habitat are disturbed within the project area. The primary direct impacts of the proposed action on wildlife would be killing or maiming of ground dwelling animals, displacement of individuals, the permanent loss and fragmentation of habitat, and increased potential for harassment of wildlife. Indirect impacts could include increased noise, introduction and spread of weeds, and increased erosion potential. Wildlife species in the general area are common and widely distributed throughout the area and the loss of some individuals and/or their habitat should have a negligible impact on populations of the species throughout the region. Impacts to BLM sensitive species are not anticipated to lead to further decline of the species range-wide.

In addition, any impacts of the proposed project would be very temporary and the project would have an overall benefit to these species as the spring is restored back to functioning condition and water quality is improved. Since WH&B generally compete and physically exclude native wildlife from springs, any of the proposed Alternatives would benefit general wildlife and BLM sensitive species.

4.1.1. Alternative A (Proposed Action)

Alternative A provides the most benefit and protection to wildlife, including BLM sensitive species and would provide the fastest recovery to the Spring. Selecting Alternative A would likely achieve full compliance with the BLM policy manuals 6840 Special Status Species Management and 1737 Riparian Area Management or achieve the full intent of the land acquisition as described above. Any impacts to sensitive species would be avoided and/or minimized through the special stipulations provided below.

Bats

Alternative A is likely to have a direct benefit for bats. Allowing the spring and riparian area to restore itself over time will allow the water to return to the natural spring channel, improve water quality, decrease sedimentation and erosion, and restore native riparian vegetation. While fencing is known to deter some bats in and around the enclosed area, adjacent ponds and other springs in the area would be utilized by bats, thus lessening any adverse impacts.

Desert bighorn sheep

Desert bighorn sheep may be disturbed by vehicles operating in their potential habitat and animals may seek cover on steep slopes and ridges to avoid vehicular activity and associated noise pollution. Increased impacts may occur if activities occur during lambing season. Potential impacts would be temporary as the duration will be a limited number of days at the site. The proposed action will have an overall benefit to the species by improving the water availability to bighorn, and reduce competition with WH&B. The fencing design provides access to water for bighorn while preventing wild horses and burros from further degrading the spring. Proposed fencing specifications will be in conformance with the BLM Handbook, H-1741 Fencing Standards Manual. Alternative A provides protection to this species and eliminates the largest portion of the threats from overgrazed by WH&B.

Springsnails

Potential impacts to springsnails from project implementation include trampling of springnails by workers and/or their equipment and impairment from sedimentation. With implementation of standard BMPs and avoidance and minimization measures, limited potential temporary adverse effects to this species is expected. Alternative A provides protection to this species and eliminates a portion of the threats from trampling and grazing by WH&B. Alternative A provides the highest protection for the Southeast Nevada Springsnails and provide the most restoration to Grapevine Springs by restoring a large portion of the spring and breaching the lower pond and allowing the other spring to flow into its natural channel. Since Springsnails have been documented around the flowing waters at the pond, there is potential they could also reestablish themselves in the channel below the pond, as they were thought to exist historically.

Migratory Birds

Depending on the time of year for construction, there is the potential to disturb nesting birds within or immediately adjacent to the proposed action. Since there is limited disturbance associated with the project and cactus and yucca are proposed to be salvaged if needed, any impacts to migratory would be limited to noise disturbance if work occurs outside the breeding bird season which generally occurs from February 15th through August 31st. Migratory birds may be displaced by habitat removal and/or noise disturbance during construction activities, but this should be small in scale due to the size of the action. Alternative A provides protection to these species and eliminates a portion of the threats from grazing by WH&B.

4.1.2. Alternative B

Same comments as Alternative A. Both alternatives provide an overall benefit to wildlife, including migratory birds by providing clean drinking water and native vegetation once the spring has recovered. Alternative B provides less benefit to wildlife, including BLM sensitive species. While this Alternative does not propose to protect the entire Springsnail population, it does protect a smaller portion than Alternative A, but larger than Alternative C. This Alternative also protects the portion of the spring where the highest concentration of Springsnails exist. This Alternative would provide more protection/use of the spring by wildlife as more of the spring would exclude WH&B.

4.1.3. Alternative C

Same comments as previous Alternatives A and B however, Alternative C would provide the least amount of protection for the springsnail and it still does not eliminate the grazing threat for potential federal listing as a majority of the spring would not be protected. The spring would likely continue to function at risk and recovery to the springsnail population would be the slowest in Alternative C. This Alternative would provide the least amount of benefit to wildlife, including migratory birds and restrict the spring from reaching its full potential to restore riparian habitat, known to provide cover/breeding habitat for these species. While fencing is known to deter some bats, this alternative proposes to fence only the first 400 ft. of the spring and additional water flows past this point. Bighorn sheep would still be excluded from a large portion of the spring as long as WH&B are free to congregate at the majority of the spring.

4.1.4. Alternative D (No Action)

No fence would be installed and no other restoration activities would occur. This would leave Grapevine Springs in a state of 'functioning at risk', with the potential for further degradation of "non-functioning" condition. The Southeast Nevada Springsnail would continue to experience threats from grazing, which has the potential to diminish the population in the spring. Existing management and use of the area would continue under the applicable statutes, regulations, policies, and land use plans. However, the BLM would not be in compliance with its directives under the current the Las Vegas Resource Management Plan, and direction under the BLM policy manuals 6840 Special Status Species Management and 1737 Riparian Area Management to protect Grapevine Springs.

4.2. Hydrologic Conditions *(section includes Wetlands/Riparian Zones)*

4.2.1. Alternative A (Proposed Action)

The Proposed Action will help restore previous hydrologic conditions. Reducing the riparian area impacted by wild horses and burros could decrease the intensity and duration of utilization of the riparian ecosystem. As a results of this action, Proper Functioning Conditions may be achieved and maintained as vegetation, soil and water-quality conditions improve. Reduced surface disturbance of soils surrounding the spring may decrease sediment transport by water and wind to the riparian areas. Water-quality conditions also should improve as the amount of animal water deposited in the spring decreases and greater amounts of vegetation decreases erosion potential and increase bioaccumulation uptake of undesirable chemical constituents.

4.2.2. Alternative B

The impacts from the fence will be as described under Alternative A. In Alternative B, the fencing of the spring will restore previous flow and run-off conditions and the riparian areas around the spring-fed stream will have the opportunity to recover.

4.2.3. Alternative C

Under this alternative, the impacts from the fence will be similar to what is described under Alternative A, but the hydrology and associated riparian area will recover at a slower rate than under Alternatives A and B.

4.2.4. Alternative D (No Action)

This no action alternative will leave this wetland in a degraded state and clearly does not provide adequate vegetation to filter sediment and aid wetland development, lacks adequate cover to protect the area from erosion or deposition as a result of overland flows, lacks diverse age-class distribution and composition of vegetation to allow recovery, and does not provide wetland characteristics necessary to support aquatic or other species. This lack of vegetation and the area's lack of balance with the sediment being supplied has permitted three things to occur: 1) the extent of the wetland has been greatly reduced, 2) the wetland's water quality has been altered, and 3)

the wetland's diversity of aquatic vegetation has been greatly reduced. Under this alternative, the area provides little biodiversity. Further, the erosion would continue, probably at an accelerated rate, potentially to a point where restoration would not be possible.

4.3. Migratory Birds

Described in Section 4.1 Fish and Wildlife (Excluding US Fish & Wildlife Service Designated Species).

4.4. Soils

4.4.1. Alternative A (Proposed Action)

Once the disturbance is excluded around the spring head, local soils will be significantly altered, by allowing for natural re-vegetation, potentially leading to increases in soil stability and decreases in local erosion. The remaining proposed action will help restore natural degredation and aggredation cycles in the former stream channel.

4.4.2. Alternative B

The impacts from the fence will be as described under Alternative A. Once the disturbance is excluded around the spring head, local soils will be significantly altered, by allowing for natural re-vegetation, potentially leading to increases in soil stability and decreases in local erosion.

4.4.3. Alternative C

Once the disturbance is excluded around the spring head, local soils will be significantly altered, by allowing for natural re-vegetation, potentially leading to increases in soil stability and decreases in local erosion. Under this alternative the local soils will recover at a slower rate than under Alternatives A or B.

4.4.4. Alternative D (No Action)

Under the no action alternative the erosion would continue, probably at an accelerated rate, potentially to a point where restoration would not be possible. Increases in soil bulk density as a result of compaction by hoof action are of particular concern in riparian zones. Bulk density increases when moist soil is compacted. Increased bulk density inhibits root exploration and root growth, as well as water holding capability. Disturbance to the soil surface increase the potential for wind and water erosion by loosening the soil particles. This is especially important on steep slopes, where run-off water velocities are greater and there is an increased potential for erosion. These impacts are more common where wild horses and burros use is spatially concentrated and occurs over extended periods of time, as is the case at Grapevine Springs.

4.5. Threatened, Endangered, Proposed or Candidate Wildlife Species and Critical Habitat

Common to Alternatives A, B and C:

This project will create approximately 0.2 acres of new surface disturbance in an area that is somewhat disturbed and it is adjacent to undisturbed, contiguous habitat wherein potential corridors for tortoise entry exist. Since tortoises have been found in the vicinity and undisturbed habitat exists in and adjacent to the project site, there is potential for tortoises to wander into the project area. If not noticed and avoided during construction activities using heavy equipment, desert tortoises could be either injured or killed (by crushing) or harassed (by being moved out of harm's way).

4.5.1. Alternative A (Proposed Action)

Alternative A would provide the most protection for threatened and endangered species and provide the mostrestoration to Grapevine Springs by restoring a large portion of the spring and breaching the lower pond and allowing the other spring to flow into its natural channel. Alternative A provides protection to this species and eliminates the largest portion of the threats from grazing by WH&B. While there is some potential risk to desert tortoises through the use of heavy equipment on breaching the lower pond, these impacts will be avoided/minimized through the terms and conditions of the biological opinion. Section 7 Consultation for this project is covered under the Programmatic Biological Opinion (84320-2010-F-0365) contingent on compliance with the terms and conditions.

4.5.2. Alternative B

Same general comments as Alternative A. Both alternatives provide an overall benefit to threatened and endangered species by providing resource protection, improved water quality, and restored native vegetation once the spring has recovered. Alternative B provides less benefit and protection to threatened and endangered species, as less of the spring would be protected and restored.

4.5.3. Alternative C

Same general comments as previous Alternatives A and B however, Alternative C would provide the least protection for threatened and endangered species and provide the least restoration to Grapevine Springs. While Alternative A provides protection to these species and eliminates a portion of the threats from grazing by WH&B, this Alternative would provide the least benefit as a majority of the spring would not be protected and not allow for recovery of water flow and proper functioning condition.

4.5.4. Alternative D (No Action)

No fence would be installed and no other restoration activities would occur. This would leave Grapevine Springs in a state of 'functioning at risk', with the potential for further degradation of "non-functioning" condition. Existing management and use of the sites would continue under the

applicable statutes, regulations, policies, and land use plans. However, the BLM would not be in compliance with its directives under the current the Las Vegas Resource Management Plan, and direction under the BLM policy manuals 6840 Special Status Species Management and 1737 Riparian Area Management to protect Grapevine Springs.

4.6. Water Resources/Quality

4.6.1. Alternative A (Proposed Action)

This project will likely impact the local water quality conditions by drastically decreasing the amount of animal waste deposited in and near the surface water. Reduced amounts of animal waste may lower concentrations of nitrate, ammonia, phosphorus, and e-coli bateria. This action will increase surface water availability to wildlife and native vegetation, increasing density, diversity and vigor thereof. Adequate and healthy riparian vegetation can improve water quality by reducing soil erosion, facilitating sediment deposition, bioaccumulation undesirable chemical in plant tissues, and reducing water temperatures.

4.6.2. Alternative B

The impacts from the fence will be as described under Alternative A. The remaining proposed action will restore previous flow and run-off conditions at a slower rate than Alternative A..

4.6.3. Alternative C

Under this alternative the water quality and quantity will recover at a slower rate than under Alternatives A and B.

4.6.4. Alternative D (No Action)

Under the no action alternative the severe degradation in water quality would continue, probably at an accelerated rate, potentially to a point where restoration would not be possible.

4.7. Wetlands/Riparian Zones

Described in Section 4.2 Hydrologic Conditions.

4.8. Wild Horses and Burros

4.8.1. Alternative A (Proposed Action)

This alternative will impact wild horses and burros by immediately making the first 600’ of the Grapevine Spring unavailable for their use, then potentially fencing an additional 200’. The phased approach also includes breaching the lower pond’s dam, this will create another riparian area that will help disperse the wild horse and burro use, by allowing them a larger area with greater water flow to use. The phased approach would benefit the wild horse and burro herd by ensuring their continued access to fresh water by retaining a portion of the source outside of the

exclosure and allowing for monitoring to determine if there are any significant adverse impacts before extending the fencing to the full 800'. A finger gate will also reduce the potential for wild horses and burros and/or their foals becoming trapped within the newly installed fence.

4.8.2. Alternative B

This alternative will impact wild horses and burros by immediately making the first 800' of the Grapevine Spring unavailable for their use. This alternative will cause the wild horses and burros to rely primarily on the ponds for their water supply, this will increase the amount of utilization and total disturbance at the pond sites. A finger gate will also reduce the potential for wild horses and burros and/or their foals becoming trapped within the newly installed fence.

4.8.3. Alternative C

This alternative will impact wild horses and burros by immediately making the first 400' of the Grapevine Spring unavailable for their use. This alternative will reduce the total impacts to the wild horses and burros because they will continue to have access to the ponds and fresh water by retaining a portion of the source outside of the exclosure. A finger gate will also reduce the potential for wild horses and burros and/or their foals becoming trapped within the newly installed fence.

4.8.4. Alternative D (No Action)

This alternative will have the least impact to wild horse and burro access and behavior, however the animals will continue to trample and utilize the entire spring area, which could be detrimental to maintaining this water source for the long term wild horse and burro management in the Johnnie HMA.

4.9. Cumulative Impacts

Cumulative effects are impacts on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.7). Identifying past and present activities is especially important to understanding the environmental baseline of resources within the analysis area. The cumulative effects of the proposed action are described below.

Table 4.1. Past, Present and Foreseeable Future Actions

Past	Mineral Exploration	Although there is no record of mining activity—site visits revealed several shallow workings or excavations that indicated exploration work, but no production.
Present	Energy Transmission Corridor	In November, 2008 the Record of Decision (ROD) for the Final Programmatic Environmental Impact Statement (PEIS), Designation of Energy Corridors on Federal Land in the 11 Western States (DOE/EIS-0386) designated an energy corridor right-of-way (ROW) identified suitable ROW locations for transmission and energy projects to locate in. Known as the West Wide Energy Corridor (WWEC), this approved location runs through Nye County and skirts around the Town of Pahrump. The ROW runs north-south just west of the proposed acquisition area.
Reasonably Foreseeable Future	Renewable Energy	BLM has four solar and one transmission line right-of-way applications in process.
Reasonably Foreseeable Future	Land Use Plan Revision	The BLM Las Vegas/Pahrump Resource Management Plan (RMP) is currently in the planning process which will revise land use and resource management directions. Included in this planning process is the analysis of alternatives to determine compatibility with resources and land uses while minimizing potential impacts. Once such alternative will consider changing the alignment of the current WWEC currently located near the proposed acquisition area and move it westward toward I-160. The outcome of the this planning process will be provided in the Record of Decision (ROD), anticipated in 2016, which will determine the alternatives to be approved.

4.9.1. Common to Alternative A, B, and C

Proposed Action — Past actions that have affected the wildlife, hydrology/wetlands/riparian, soils, and water quality resources include artificial water developments and livestock grazing. These actions led to direct loss of habitat, elimination of springsnail populations, and overall

degradation of spring function. There are no other current actions affecting the spring. Looking ahead, climate will have an effect on these resources. Since the long term effects of climate change are still uncertain for this area, it is unclear how resources might be affected. However, warmer drier conditions are anticipated which could affect spring flow.

The proposed action should allow restoration at Grapevine Springs which would allow the spring to properly function and to become more resilient to future climatic changes. Ensuring that resources are resilient and properly functioning now will allow them to better withstand any negative impacts from future climate change. There are no other known foreseeable actions. Concerning cumulative impacts to wild horses and burros, it is critical for healthy wild horse and burro herds to maintain rangeland resources. These enclosures should have little negative impacts on WH&B in the long term, as there would still be water available for use. Protecting spring sources, while maintaining the WH&B access to water, will help aid the long term management and survival of wild burros in the Johnnie HMA.

4.9.2. Alternative D (No Action)

No Action — Past and present actions would remain the same, however if the project is not implemented, Grapevine Springs would continue to trend downward in a ‘non-functioning’ state. Erosion and low biodiversity would continue to worsen and natural recovery would become even more unlikely. Affected resources would continue to be negatively affected and it would be more difficult for the strained spring to withstand any potential environmental changes associated with future climate change. In addition, BLM sensitive springsnails populations may not be able to recover if populations reach a significant decline due to springs not be managed.

4.10. Mitigation Measures

In addition to the design features described in Ch. 2 to minimize effects to resources, the following mitigation measures would help reduce potential impacts to the following resources:

Migratory Birds:

1. To prevent undue harm, habitat-altering projects should be scheduled outside the bird breeding season. In upland desert habitats and ephemeral washes containing upland species, the season generally occurs from February 15th through August 31st.

2. If a project that may alter any breeding habitat has to occur during the breeding season, then a qualified biologist must survey the area for nests prior to commencement of construction activities. This shall include burrowing and ground nesting species in addition to those nesting in vegetation. If any active nests (containing eggs or young) are found, an appropriately-sized buffer area must be avoided until the young birds fledge. As the above dates are a general guideline, if active nests are observed outside this range they are to be avoided as described above.

Threatened, Endangered, Proposed or Candidate Wildlife Species and Critical Habitat:

1. If construction activity utilizes any heavy equipment on breaching the lower pond, it will require a desert tortoise monitor to escort and clear in front of the equipment if carried out from March through November when desert tortoise are most active per Terms and Conditions provided. This project will also require a monitor, FCR or other approved by

the BLM to present an education program (see Term and Condition 1.e.) to all workers accessing the site. A copy of the terms and conditions has been uploaded to ePlanning (Sec 7 Log # NV-052-15-157).

Chapter 5. Tribes, Individuals, Organizations, or Agencies Consulted:

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Table 5.1. List of Persons, Agencies and Organizations Consulted

Name	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
Timbisha Shoshone	Contacted to check if interested in consultation.	Not Interested in activities.
Nevada Department of Wildlife (NDOW)	Contacted to comply with state wildlife requirement for fences and check if there are impacts to Wildlife Species managed by NDOW	In Support of this Project

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Chapter 6. List of Preparers

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Table 6.1. List of Preparers

Name	Title	Responsible for the Following Section(s) of this Document
Mark Boatwright	Archaeologist	Cultural Resources, Native American Religious Concerns, Paleontological Resources
Lauren Brown	District Weeds Management Specialist and ESR Coordinator	Invasive Species/Noxious Weeds
Lisa Christianson	Air Quality Specialist	Air Quality, Greenhouse Gas Emissions, Hazardous Waste
Melanie Cota	Wildlife Biologist	Author of document as well as Fish and Wildlife, ACECs, Migratory Birds, Threatened / Endangered Animal Species
Fred Edwards	Botanist	Vegetation, Rangeland Health, Threatened / Endangered Plant Species, Livestock Grazing, Wooldland/Forestry
David Fanning	Geologist	Geology, Mineral Resources, Energy Production
Susan Farkas	Planning and Environmental Coordinator	Environmental Justice, Socioeconomics
Ashley Holcomb, GBI	Natural Resource Specialist	Provided assistance for Vegetation, Rangeland Health, Threatened / Endangered Plant Species, Livestock Grazing, Wooldland/Forestry under supervision of BLM Fire and Weeds Specialists
Krystal Johnson	Wild Horse and Burro Specialist	Wild Horse and Burro, Farmlands
Ben Klink, GBI	District Weeds Technician	Provided assistance for Fuels/ Fire Management and Invasive Species/Noxious Weeds under supervision of BLM Fire and Weeds Specialists
Randy Kyes	Wilderness Planner	BLM Natural Areas, Wild and Scenic Rivers, Wilderness, WSAs, Lands with Wilderness Characteristics
Sean McEldery	Fire Management Specialist	Fuels/ Fire Management
Erica Pionke	Reality Specialist	Lands and Access
Boris Poff	Hydrologist	Floodplains, Hydrologic Conditions, Soils, Water, Wetlands and Riparian
Marc Sanchez	Outdoor Recreation Planner	Recreation
Jonathan J. Smith	Restoration Specialist	Restoration
Mark Tanaka-Sanders	Associate Field Managr -Pahrump Field Office	Visual Resources

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Appendix A. References

Sada, Donald, Desert Research Institute Grapevine Spring Water Budget and Springsnail and Ecosystem Study, 2011.

Ramey, V., Evaporation and evapotranspiration: Center for Aquatic and Invasive Plants, University of Florida, and the Bureau of Invasive Plant Management, Florida Department of Environmental Protection, 2004.

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Appendix B. Detailed List of Conformance

The following is a detailed list of land use plan and resources manual management objectives and directions the Proposed Action is in conformance with:

Las Vegas Resource Management Plan (signed October, 1998)

- **Soil**
  - Soil Resource Management Objective SL-1: Reduce erosion and sedimentation while maintaining or where possible enhancing soil productivity though the maintenance and improvement of watershed conditions.
  - Soil Management Direction SL1–a: On watersheds that exhibit good potential for recovery, implement protective measures, including but not limited to fencing and removal of tamarisk.
- **Water Resource**
  - Water Resources Management Objective WT-1: Maintain the quality of water presently in compliance with State and/or Federal water quality standards. Improve the quality of water found to be in noncompliance.
  - Water Resources Management Objective WT-3: Ensure availability of adequate water to meet management objectives including the recovery and/or re-establishment of Special Status Species.
- **Riparian**
  - Riparian Management Objective RP-1: Provide widest variety of vegetation and habitat for wildlife, fish and watershed protection; ensure that all riparian areas are in proper functioning condition by achieving an advanced ecological status, except where resource management objectives require an earlier successional stage.
  - Riparian Management Direction RP-1–b: Improve riparian areas, giving priority to areas functioning at Risk with a downward trend. Implement measures to protect riparian areas, such as fencing and/or alternate water sources away from riparian areas.
  - Riparian Management Direction RP-1–c: Ensure minimum requirement of Proper Functioning Condition on all riparian areas is maintained or achieved.
- **Fish and Wildlife**
  - Fish and Wildlife Management Direction: FW-3-g. Protect important resting/nesting habitat, such as riparian areas and mesquite/acacia woodlands. Do not allow projects that may adversely impact the water table supporting these plant communities
  - Fish and Wildlife Management Direction: Improve disturbed non-game bird habitat, including the water table supporting these habitats, by emphasizing maintenance and enhancement of natural biodiversity.
- **Special Status Species**

- Special Status Species Management Objective: SS-2. Manage habitat to further sustain the populations of Federally listed species so they would no longer need protection of the Endangered Species Act. Manage habitats for non-listed special status species to support viable populations so that future listing would not be necessary.

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- 3.4.1.3 Existing Water Developments (pg. 14)
  - Consistent with resource management objectives, existing projects may be modified to provide WH&B with access to water through one or more of the following methods:
    - Piping water to a trough away from the source.
    - Piping water to a trough outside an exclosure.
    - Retaining a portion of the source outside the exclosure.
- 3.4.1.4 Proposed Water Developments (pgs. 14–15)
  - Water sources may be excluded from use by WH&B to protect the water source, the associated riparian area, and to maintain or improve the quality and quantity of water. Where possible, projects should be designed to provide WH&B with access to water as described in 3.4.1.3 above.
  - Fences constructed in proximity to major WH&B water sources and smaller riparian pastures or exclosures should be constructed with a top rail composed of pipe or wooden poles. The top rails provide a visual barrier to prevent WH&B from entering the exclosure and becoming trapped."
- 4.1.5 Thriving Natural Ecological Balance (TNEB) (pg. 17)
  - Consistent with 43 CFR 4700.0-6, WH&B shall be managed in balance with other uses and the productive capacity of their habitat (i.e., WH&B will be managed to achieve and maintain a thriving natural ecological balance (TNEB) and multiple use relationships on the public lands).
  - To achieve a TNEB on the public lands, WH&B should be managed in a manner that assures significant progress is made toward achieving the Land Health Standards for upland vegetation and riparian plant communities, watershed function, and habitat quality for animal populations, as well as other site-specific or landscape-level objectives, including those necessary to protect and manage Threatened, Endangered, and Sensitive Species (TES). WH&B herd health is promoted by achieving and maintaining TNEB.